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ABSTRACT

This document is intended to serve as a guideline for school boards planning an educational complex. The diagrams are simple examples of some of the types of facilities, the space relationship, and the compositional elements of major areas for an intermediate school of 900 students. (Author)

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Schools for Intermediate Students

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Introduction

The Intermediate Division is the period in the learning continuum that roughly coincides with the transitional stage of child development bridging the latter years of childhood and the early years of adolescence. The purpose of the Division as an educational entity is to facilitate planning for the learning experiences especially suited to the unique characteristics and needs of young adolescents, aged approximately 12-15 years. It will be noted that the division spans the final two years of the elementary school and the initial two years of the secondary school.

Translated into operational terms, the Intermediate Division is characterized organizationally by flexibility, environmentally by sensitivity to changing needs, and instructionally by personalization. Its educational rationale reflects the diverse and dynamic interests of young adolescents — a time of many and fleeting interests, of exploration and experiences of as wide as possible a spectrum of learning, prior to the more serious and consequential choices of the Senior Division.

Ideally, the educational complex to house any school program should be designed to fit the educational philosophy for which it is intended; thus each facet of the design should relate to its ultimate educational purpose.

If the philosophy and curriculum of the school are to be traditional in nature, the school design will likely be conservative, although not necessarily unimaginative. However, If the educational program organization and philosophy are to be flexible and student-oriented, involving any of the following learning methods—team planning, variable size group instruction, flexible scheduling, independent study or individualized study — the items outlined below should be analysed by the planning team.

Items requiring evaluation:

- adaptability to accommodate curriculum change and emphasis
- flexibility of internal space arrangements (taking into consideration heating, lighting, ventilation and acoustical criteria) to facilitate rearrangement of interior equipment
- adaptability to allow for the installation of new technological equipment

Facilities for discovery and inquiry:

- learning resources centre suitably located for ready accessibility by students and teachers
- the main centre will not require as much space if "satellite" resource centres are planned
- indoor and outdoor science-based facilities

Facilities for development of skills and capabilities:

- flexible general learning areas for academic and vocational skills
- special areas and equipment for development of physical, manual and expressive skills
- areas where students can develop their social aptitudes through formal and informal gatherings

Facilities for exploration and activity:

- for groups varying in size
- for indoor and outdoor activities involving extensive physical movement
- for activities of a social and academic nature
- for performance-type activities
- for creative activities

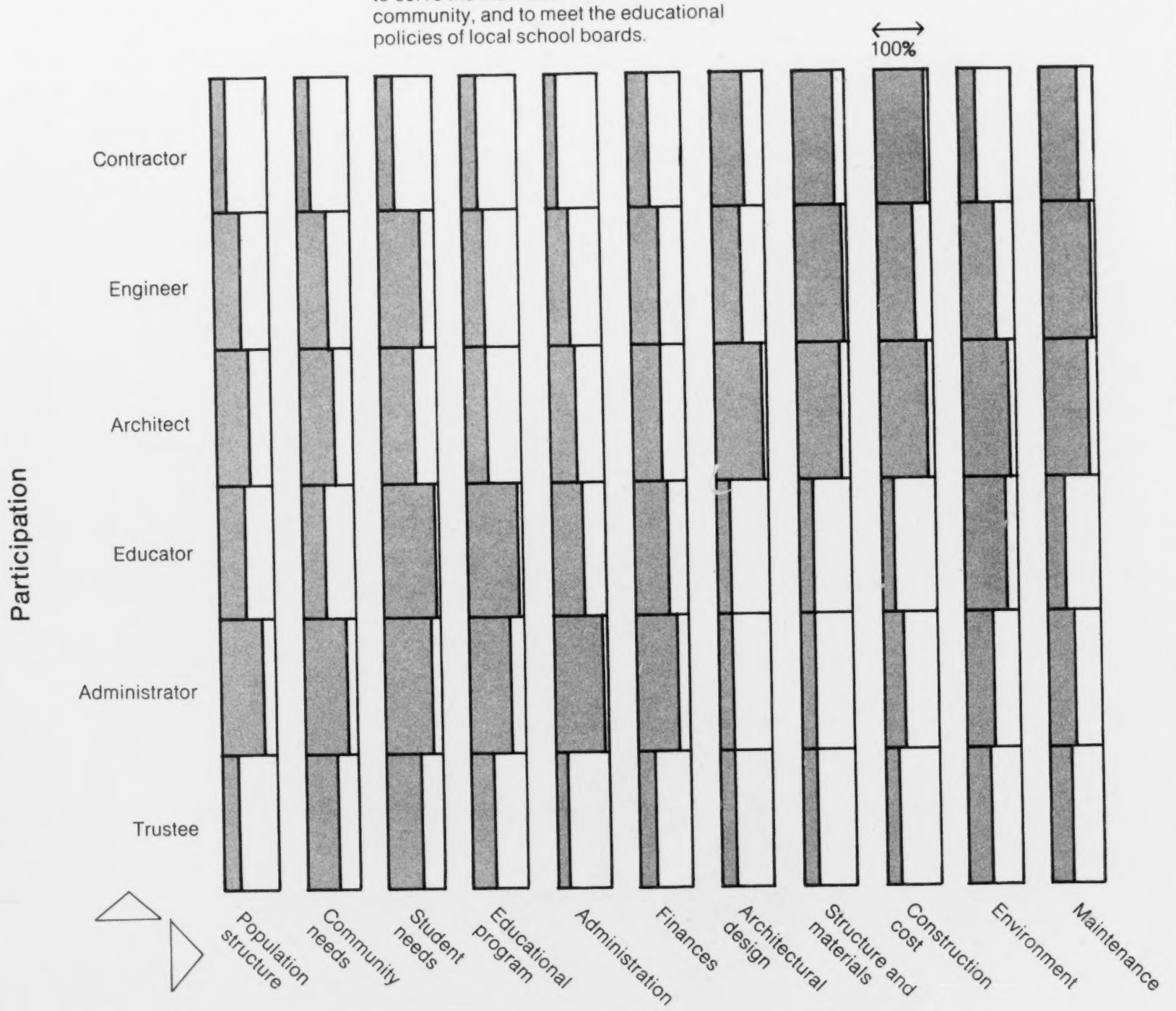
Facilities for reflection and study:

- quiet, comfortable area for individuals and for variable group sizes

The diagrams in this brochure are simple examples of some of the types of facilities, the space relationship and compositional elements of major areas for an intermediate school of 900 students. There is no intention of designing an ideal school that all boards should emulate.

Major Planning Considerations

The chart indicates the personnel involved and the knowledge required to achieve a school building that will fulfill its function to serve the individual as well as the community, and to meet the educational policies of local school boards.



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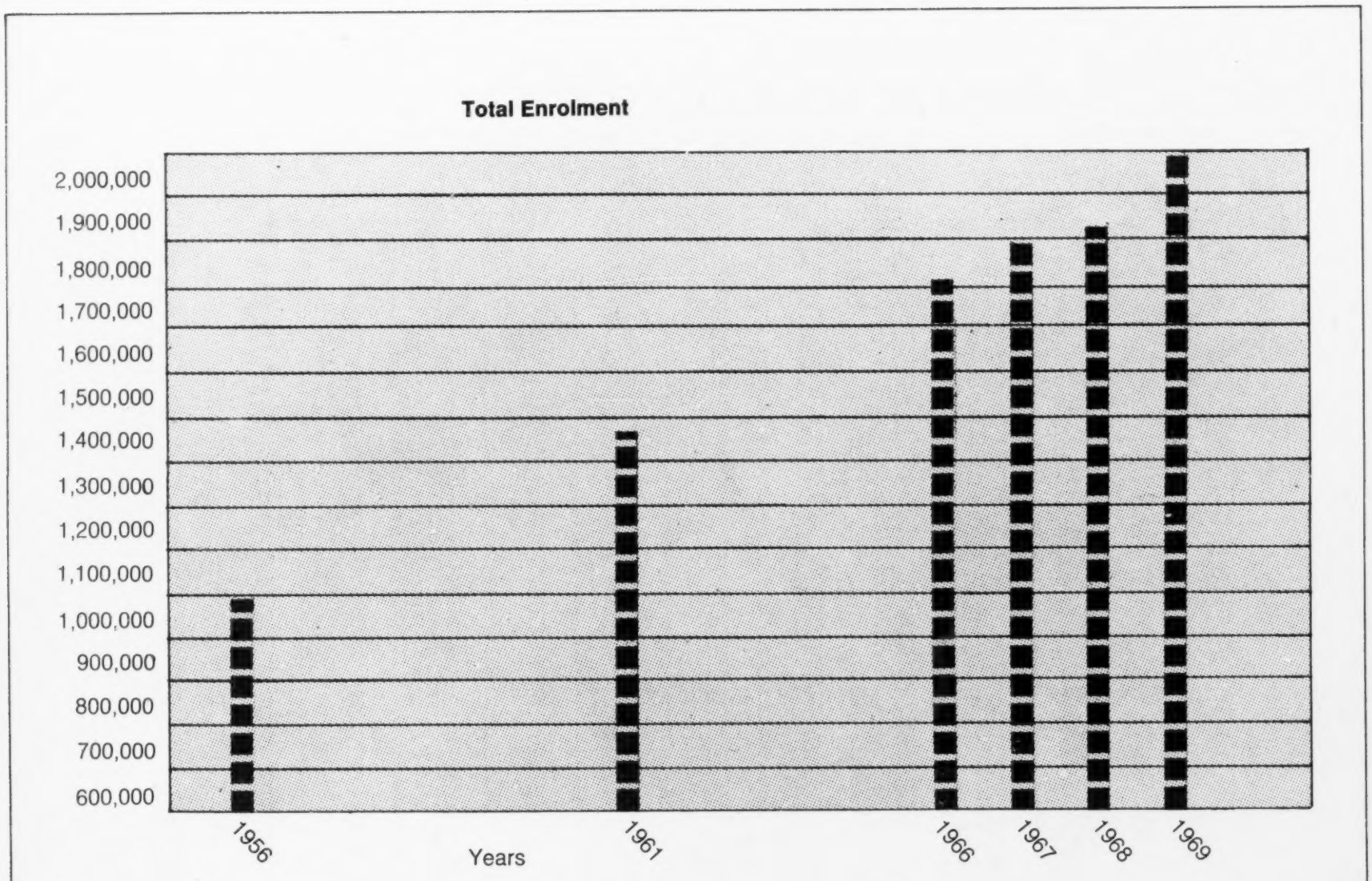
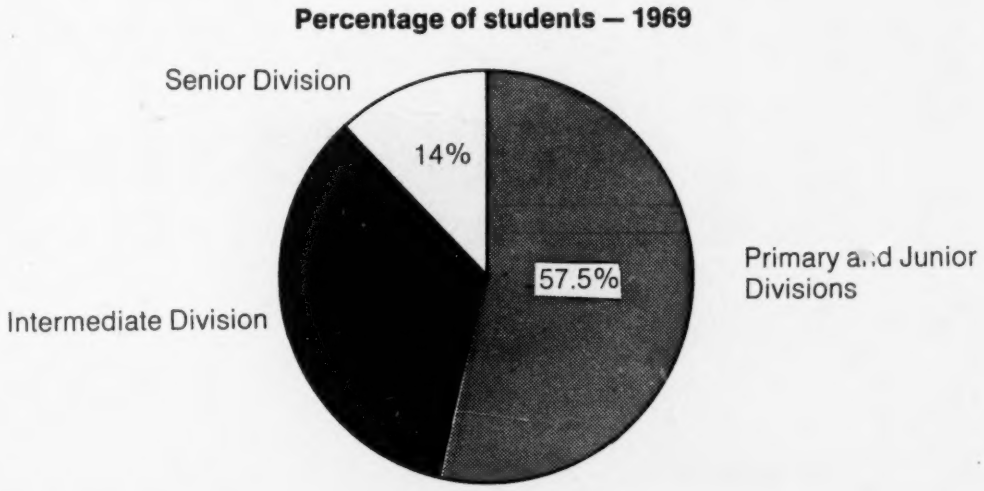
Student Enrolment in Ontario





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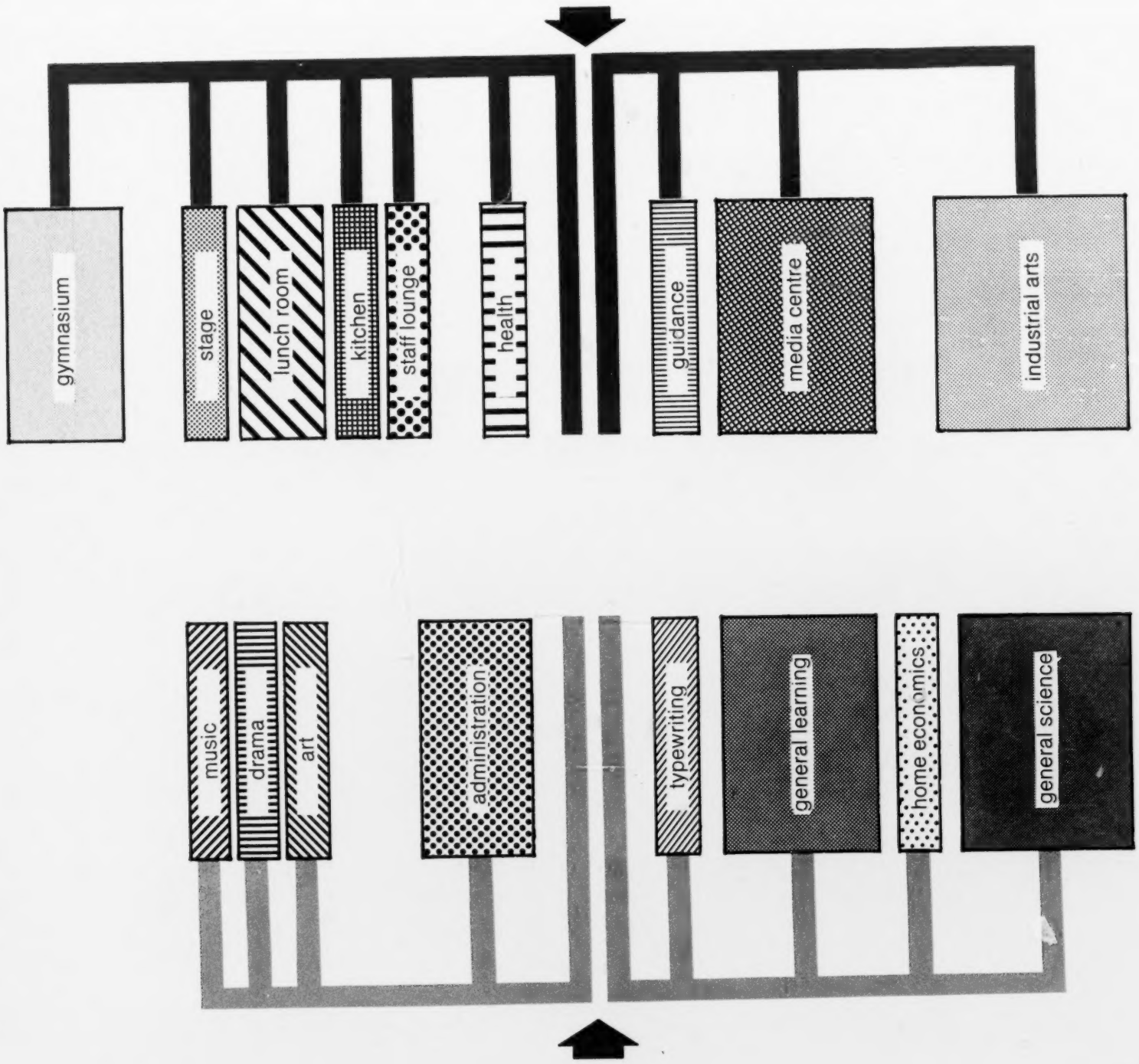

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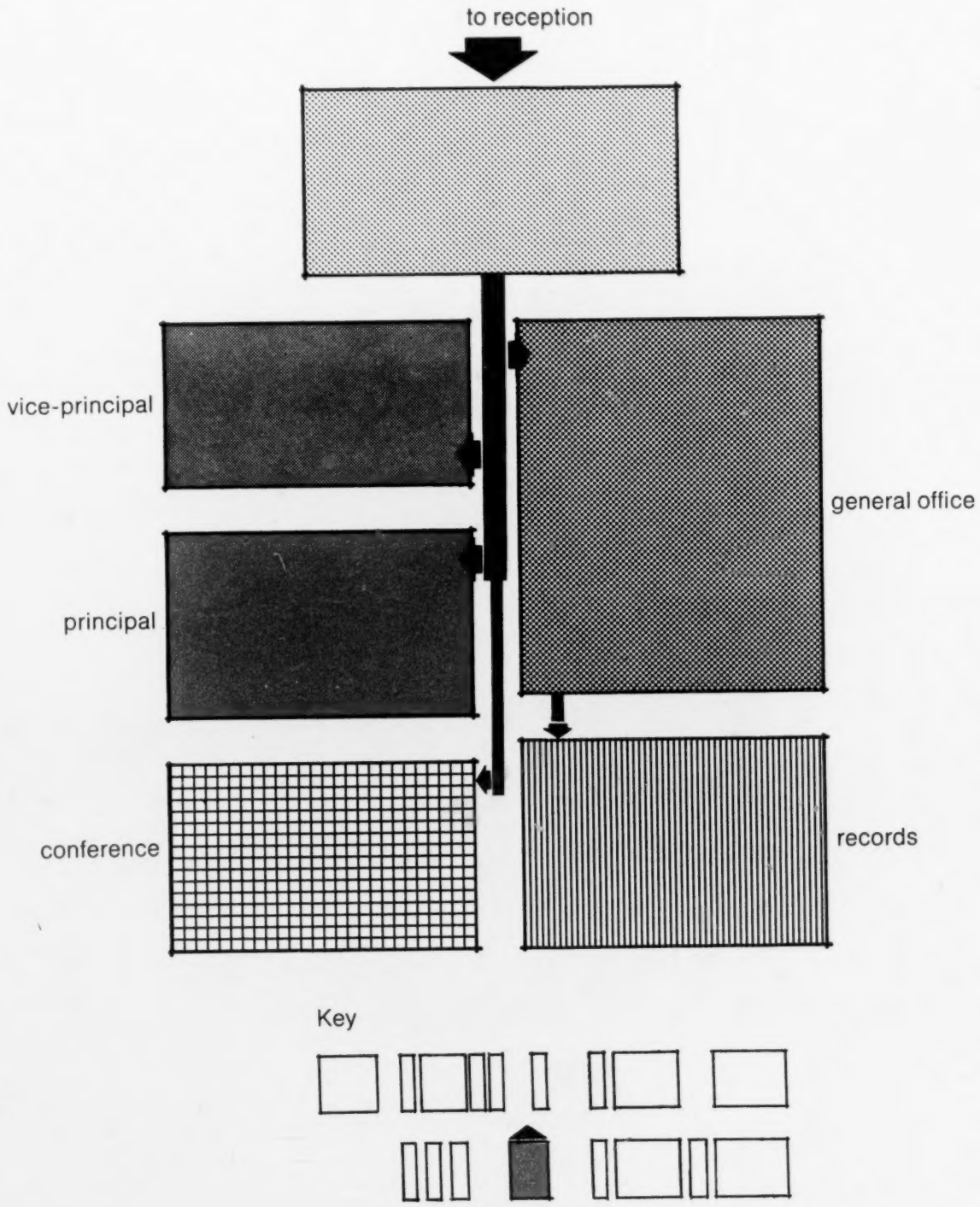

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Administration

Function
The administrative area plays a very important role in school management. Here, school policy can be planned and problems solved. The facilities should provide a pleasant environment for teachers, parents, students and consultants.

The administrative offices must be flexible enough to accommodate variations in organizational structure and business procedures. For this reason, movable partitions and flexibility of space are very important.

Location
It is recommended that the administrative offices be centrally located near the main entrance, and isolated from heavy circulation areas.

Areas

Principal
The principal has an important function in relation to parents, teachers and students. His office should be designed for privacy. The recommended square footage is 145.

Equipment: A desk, swivel armchair, comfortable side chair, bookshelves, file cabinet, telephone and intercom are required.

Vice-principal
The recommended square footage is 120. He should be close to the reception area. His office should be similarly equipped to that of the principal.

Conference room
The recommended square footage is 150. This space will be used for discussion and developing school policy. The space should be equipped with a conference table and chairs for about eleven persons. Chalkboard is essential and black-out for projection purposes should be provided. Good lighting and ventilation are very important.

General office
The recommended square footage is 300. It should be close to the reception area. Standard equipment for this area includes secretaries' desks, chairs, typewriters, copy machine, filing cabinets, telephone and master clock.

Records room
The recommended square footage is 200. This should be accessible from the general office. A worktable, sufficient cupboards and shelves for material storage, duplicating equipment and student file cabinets are to be placed in this area.

Reception
The recommended square footage is 200. Close to the general office, it may be separated from the general office by means of a counter and should be tastefully decorated. This area should provide chairs for visitors, tackboards and panels to display student work and staff mail boxes.

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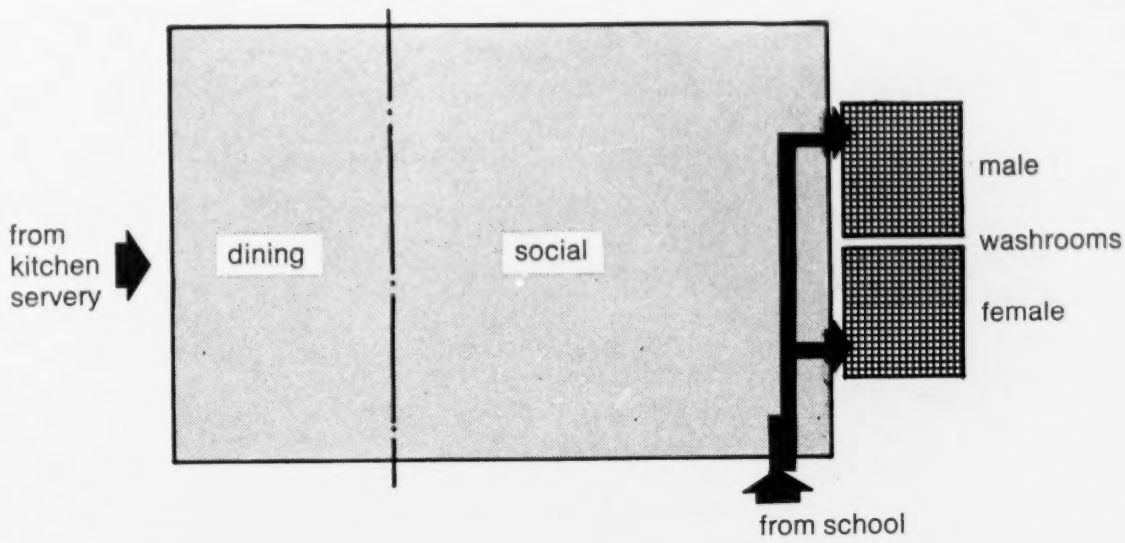
Space Relationship



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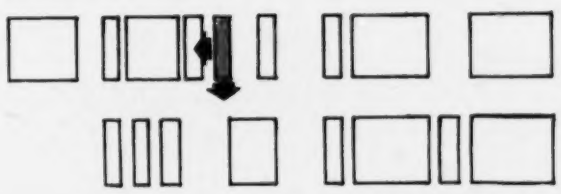

Staff Lounge

Function
This facility is to provide a place where members of the staff can relax and meet socially. It is suggested that part of the lounge can be used as a staff dining area.

Location
Where the facility is to be used as both a social and dining area, it should be located in such a manner that the dining area is easily accessible to the kitchen servery.

Area
The area can be calculated in the following manner:
allow 10 sq. ft. per person for the dining area
allow 20 sq. ft. per person for the social area

Assuming that approximately 50% of the staff may be using the staff lounge at one time, a school with an enrolment of 900 pupils would mean creating a facility for approximately 40 persons.
20 x 10 sq. ft. per person dining area = 200 sq. ft.
20 x 20 sq. ft. per person in lounge area = 400 sq. ft.
The total area would therefore be 600 sq. ft.

Single toilet facilities for each sex should also be provided, convenient to the staff lounge.

Furniture and equipment
In the social area, furniture should be comfortable and attractive rather than institutional in nature. A magazine and periodical rack and a bulletin board for staff notices should also be provided.

In the dining area, tables and chairs should be provided to seat a maximum of 20 persons.

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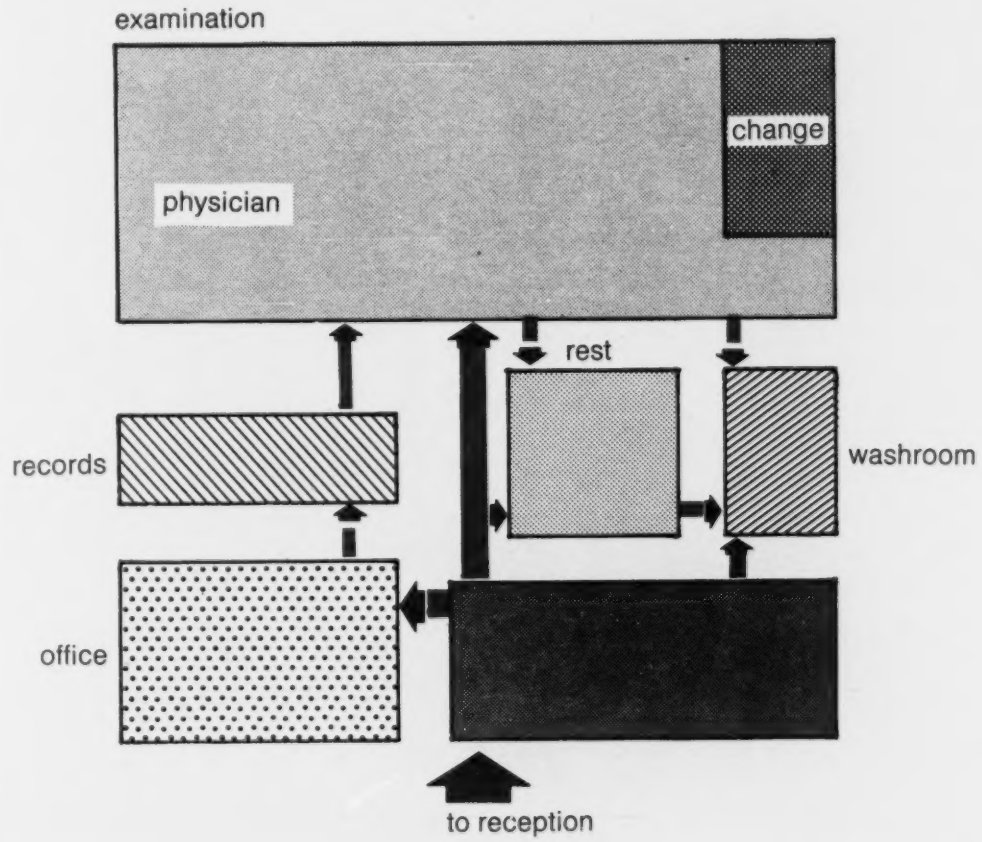
Space Relationship



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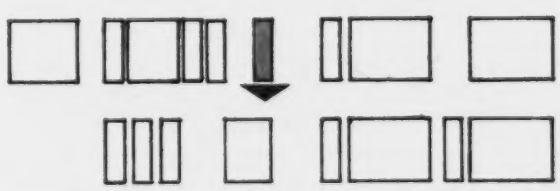

Health

Function
To assess health conditions of the students.
To inform school personnel about medical difficulties of specific individuals.
To provide first aid treatment for accidents and sudden sickness during the school day, such as isolation in some cases to prevent the spread of diseases.

It should be emphasized that this facility is *not* the focal point of a health education program which is a part of the curriculum that includes the health education course of study itself as well as physical education, science, and home economics.

The school should not endeavour to provide an expensive facility completely equipped when that type of facility is available at public hospitals and clinics.

Location
The health area should be easily accessible to its users. Health records should be available to administrators and counsellors.

Consideration should be given to locating the facility in a relatively quiet part of the school.

Areas

Waiting area
The area recommended is 75 sq. ft., to accommodate six persons. Direct access to the examination room is advised. Washroom facilities should be near the waiting area. This area should be equipped with chairs, a table, shelving for books and magazines and a bulletin board.

Rest room
It is recommended that 54 sq. ft. be used to accommodate two persons for supervision. This area should be directly accessible to the examination room and to the washroom facilities.

A bed-type couch and a chair should be provided. The environment should promote a relaxed atmosphere. Good ventilation and sound insulation is important.

Washroom
It should be suitably located with convenient access from the examination room and waiting area as well as the rest room. The area recommended is 30 sq. ft.

Examination room, doctor's office and nurse's office
Usually these three can be combined in one space and separated by means of light partitions.

Examination room
It should contain a screened-off dressing area equipped with a chair, mirror and facilities for hanging clothes. Examination couch, facilities for weighing and measuring students, and chairs should be provided. There should be a sterilization and combined instrument and medicine cabinet. The room should have one unobstructed dimension of 20 ft. for visual acuity examination. If the 20 ft. dimension is difficult to achieve, the room can be used diagonally or a mirror employed. A cupboard for dressings and standard ointments and lotions should also be available.

The examination room should be well lighted and ventilated. The facility should have visual and acoustic privacy for its users. A file cabinet for student health records should be available. There should be storage for supplies. A writing desk and typewriter should be made available for the nurse. A washbasin should be provided.

For dental treatment a fully equipped unit might travel from school to school providing dental services on a timetable basis. If not, floor fittings for water supply and waste should be available for connection to the dental chair.

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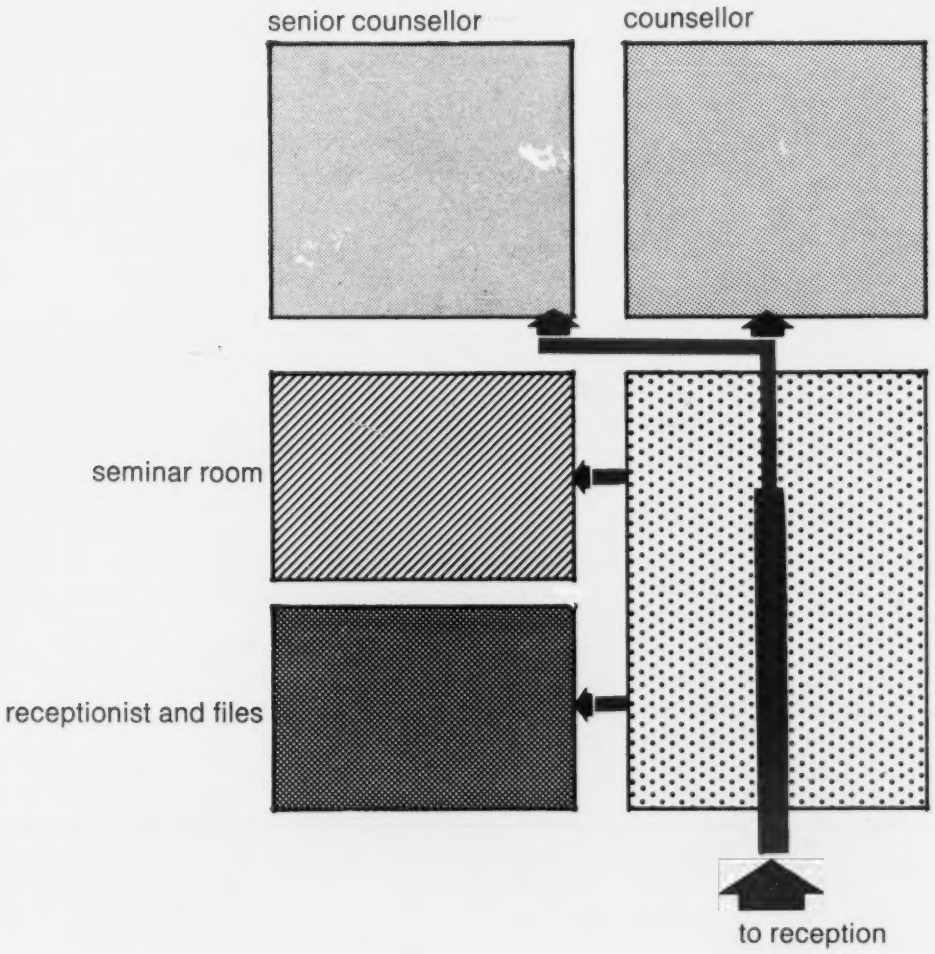
Space Relationship



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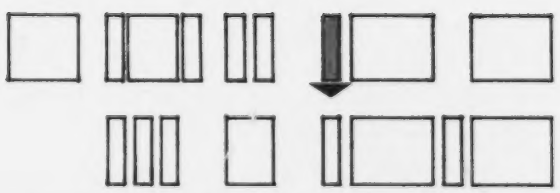


Guidance and Counselling

Function
To help students know themselves and establish an identity.

To provide a service by means of which all students may freely and securely explore their problems with the help of a skilled professional counsellor.

To help students develop competence in decision-making so that with confidence they may cope with their educational, vocational, personal and social problems.

To encourage students to obtain the educational and vocational information necessary for adequate career planning, and to provide access to such information.

To stimulate the students' growth, socially, intellectually, and ethically, by means of constructive small group discussions.

Location
It is recommended that the guidance unit be located where it is most easily accessible to students and yet is in close proximity to the resource centre where career information is available. It is now considered unwise to establish the guidance unit as part of the administrative suite. The reason for the separation provides privacy which encourages the students to visit the counsellor.

Areas

Senior counsellor
The senior counsellor requires quarters with an atmosphere that inspires openness and confidence, with full privacy, with adequate ventilation, tasteful decoration and, if possible, access to natural light. Area recommended is approximately 120 sq. ft.

Equipment: A low table, three or four comfortable chairs, a desk, a file cabinet, book-shelves, an electric outlet for recording, and a telephone are required.

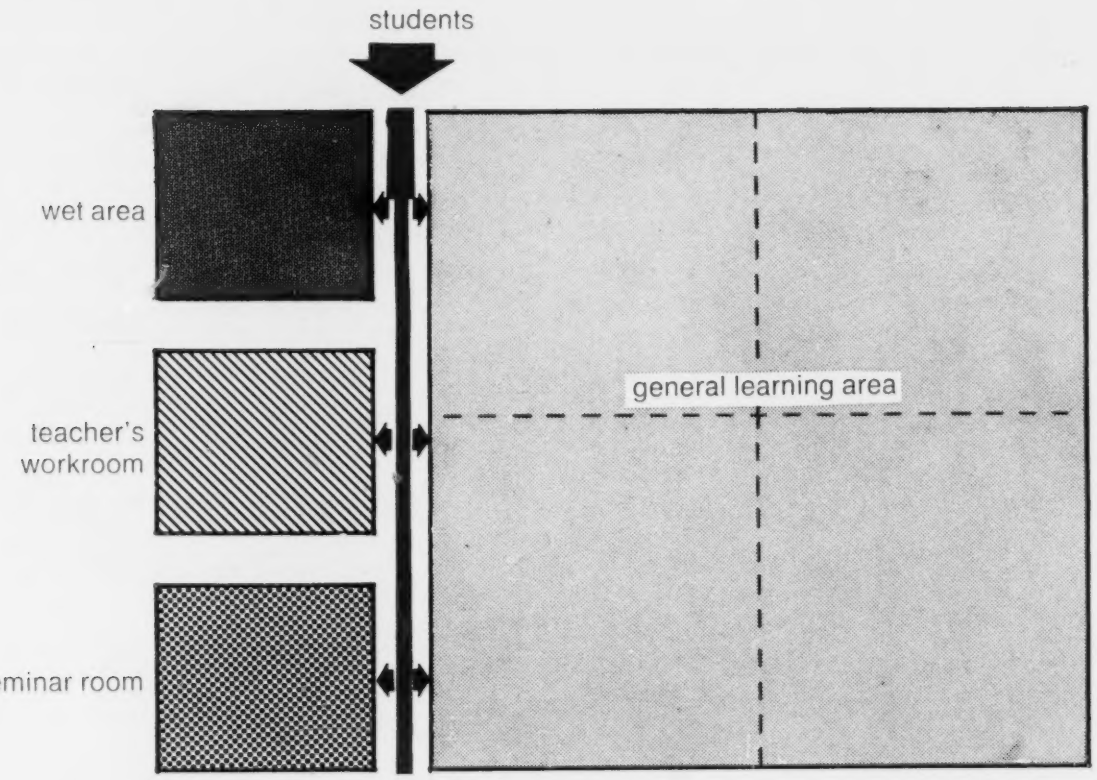
Counsellor
A space of 80 to 100 sq. ft. is recommended. The number of counselling units depends upon the school enrolment and the personnel available. In this case, the area recommended is for a school enrolment of 900.

Equipment: It is similar to that of the senior counsellor except that the desk and telephone may be omitted.

Reception
A cheerful, warm, relaxed atmosphere should pervade this area. It should be attractive and inviting. The furnishings should include one or two low tables, several comfortable chairs, and wall display facilities. The section occupied by the receptionist's desk and files can be separated from the main open area by the use of display panels or planters. Suggested area approximately 230 sq. ft.

Seminar room
A partitionable seminar room is required for the small group discussions that are becoming an increasingly important part of the guidance program. Groups vary in size from two or three persons up to a maximum of twelve.

Space Relationship



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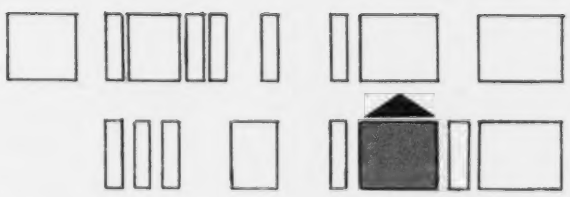

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General Learning Facilities

General Learning Area

Function
To accommodate the studies such as language, mathematics, history, geography, health education, and group discussion. The activities associated with all these subjects are the same—reading, writing, watching and learning.

Location
The learning areas should be in the same part of the school. Inter-relation can be achieved horizontally and vertically. The recommended location should be relatively quiet and near to the library resource centre.

Area
The area recommended is 750 sq. ft. to accommodate a group of 35 students.

Arrangements
The possible space arrangements are numerous and two, three or more learning areas could be combined depending on the program. These facilities could be on the same floor or on different levels within the same section of the school.

The areas may or may not be enclosed with movable partitions or case-work units. Movable case-work units, which in some cases will incorporate writing, tackboard, and projection screen surface, could be used to divide such an enlarged open space area into many sub areas of various sizes.

Such an arrangement could easily be altered by teachers or pupils on a day-to-day or weekly basis.

A few teaching units may require separation from the rest of the units by demountable or permanent partitions providing a high degree of acoustical and visual separation. Language facilities for oral instruction in a second language may require this type of enclosure. Teachers conducting special education programs or groups of withdrawn pupils may also require the use of enclosed space for some or all of the time.

Furniture
Furniture should be light, durable, adjustable and easy to move. Tables can be of different shapes and sizes and designed in such a way as to facilitate grouping. Chalkboard with map rail located along the top of the writing surface, tackboard and projection screen will also be needed. If the chalkboard is metal, this would permit its use as a tackboard.

Projection screen
A projection screen may be permanently located and adjustable to the requirements of various projectors, or be a part of specially designed movable units which include chalkboard, tackboard and projection screen surface. This unit can serve as a divider in the learning area.

Storage
Mobile storage units with adjustable shelving will be required to accommodate books and supplies where open-concept planning is utilized.

Equipment
Provision should be made for sufficient electrical outlets for the use of various audio-visual equipment devices which may include:

- overhead projector
- filmstrip projector
- slide projector
- filmstrip preview 8 mm or 16 mm projector
- film projector
- tape recorder
- record player
- television set

Some or all of the devices might be in a teaching unit at any one time, but through the use of mobile case-work units, they can be easily moved from one area to another, reducing the total number required for the school.

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Teachers' workroom

Function
The teachers' workroom is for the use of the teacher teams in one or more adjoining general learning areas for planning the program, evaluation of student progress. Such an arrangement facilitates co-operation and joint planning.

Area
The recommended area is 50 sq. ft. per teacher. The room must provide desk space for each teacher and also storage for his books, files and equipment. The design of the space and the kind of furniture provided for this room should facilitate the process of group planning which lies at the heart of co-operative teaching.

Furniture and equipment
The following furniture and equipment is recommended for a teacher workroom — desk, chair, filing space, shelving, a wall mounted clock, a coat closet and a 3 ft. x 10 ft. meeting table.

Wet area

Function
This facility is required in an open concept to provide space for small groups involved in special activities that require the use of a water supply. Materials would be required for drawing and clay modelling, paper cutting, dry and liquid tempera painting, possibly wood and plastics, along with arts and crafts reference books.

Location
The wet area could be located to serve a cluster, or it could be located to serve one class. This facility could be located adjacent to the general learning area or in a central common. The educational program and consultation with the educational authorities will determine the most advantageous and desirable location of the wet area.

Area
For each group of classroom size (35 pupils) 50 sq. ft. of wet area is recommended.

Equipment
Provision should be made for sufficient open shelving and cupboard space for storage of supplies and equipment. A double sink with a water supply and a water and stain resistant counter top is required. Counter space and a work table will be required. If flooring is not of a water resistant nature, a method should be found to protect the flooring from water damage.

Tackboards for display of student work, drying, and instructional material should be provided. Electrical outlets for every kind of audio-visual presentation should also be provided.

Seminar room

Function
A seminar room provides a suitable place for planning, viewing, discussion, etc., where the general learning facilities are partially or wholly in the open-concept plan.

Location
The seminar room forms a part of the general learning facilities and is enclosed by demountable partitions.

Area
The area recommended is 150 sq. ft. to accommodate up to 15 students. One would normally be provided for each three to four classrooms equivalent.

Furniture and equipment
The furniture generally consists of tables and chairs to accommodate up to 15 students. Chalkboard, tackboard, adjustable screen, outlets for various audio-visual devices may be included.

Industrial Arts

Function
The industrial arts program provides a unique opportunity for students to:

- discover and apply the useful properties of materials, both traditonal and newly developed
- study and experiment with the application of scientific principles
- understand the interrelation of the arts, sciences and technology
- appreciate the importance of technology in our society

Location
This area should be located at grade level, if possible, with an outside entrance for delivery of supplies. The noise factor should be considered in locating the facility and acoustical treatment is necessary.

Area
Two types of room plans are envisaged. The single room is designed for schools that require one industrial arts teacher and the double room for larger schools requiring the services of two teachers. For a single facility, an area of 1,300 - 1,800 sq. ft. is recommended. For a double facility, an area of 2,600 - 3,600 sq. ft. is recommended.

Facilities
The same activities are carried on in each type of room. More work areas for each activity can be provided in the double room. However, to avoid unnecessary duplication of equipment, associated activities have been grouped together. Provision should be made for free movement.

Planning and resource area
The size of the planning and resource centre will be governed by the overall room size. Provision for soundproofing and dust proofing is desirable. Partitions should be glazed for maximum view to the main room. This area should provide library and resource materials, drafting tables, audio-visual equipment, screen, blackboard and tackboard, Drafting tables in groups of four or more would be ideal for conferences.

Finishing room
This area should contain an effective exhaust system, workbench and sink, steel supply cupboards and racks for drying and storage.

Storage
The amount and type of storage will depend on the number of pupils. Careful planning of the storage areas is necessary to ensure the safe and efficient use of material and an orderly traffic flow. An outside service entrance is desirable for delivery. Open storage of small tools, located as close as possible to the work area may be considered.

Welding area
Located within the metal work section, this facility provides instruction in acetylene, arc and spot welding. Because of the incendiary nature of this area, special fire protection will be required when planning the welding area, its equipment and ventilation.

General equipment
Wherever possible, furniture should be adaptable to more than one function. For example, metal-topped benches, designed for metal work, could be employed for glueing, plastic technology and wood lamination. Specialized benches for portable power tools, soldering, and basic electricity should be provided with electrical outlets, preferably switch controlled from the power panel for safety.

Tools and equipment
No attempt has been made to list the various hand tools that form an integral part of an industrial arts room. The purchaser, in deciding upon hand tools equipment, should keep the following in mind:

- quantities of any one type of tool should be sufficient to supply six to eight boys at one time
- tools should be stacked in a variety of sizes, designs and types to make possible many acceptable solutions to a particular problem; a few of each of several clamp styles are more desirable than many units of one particular style

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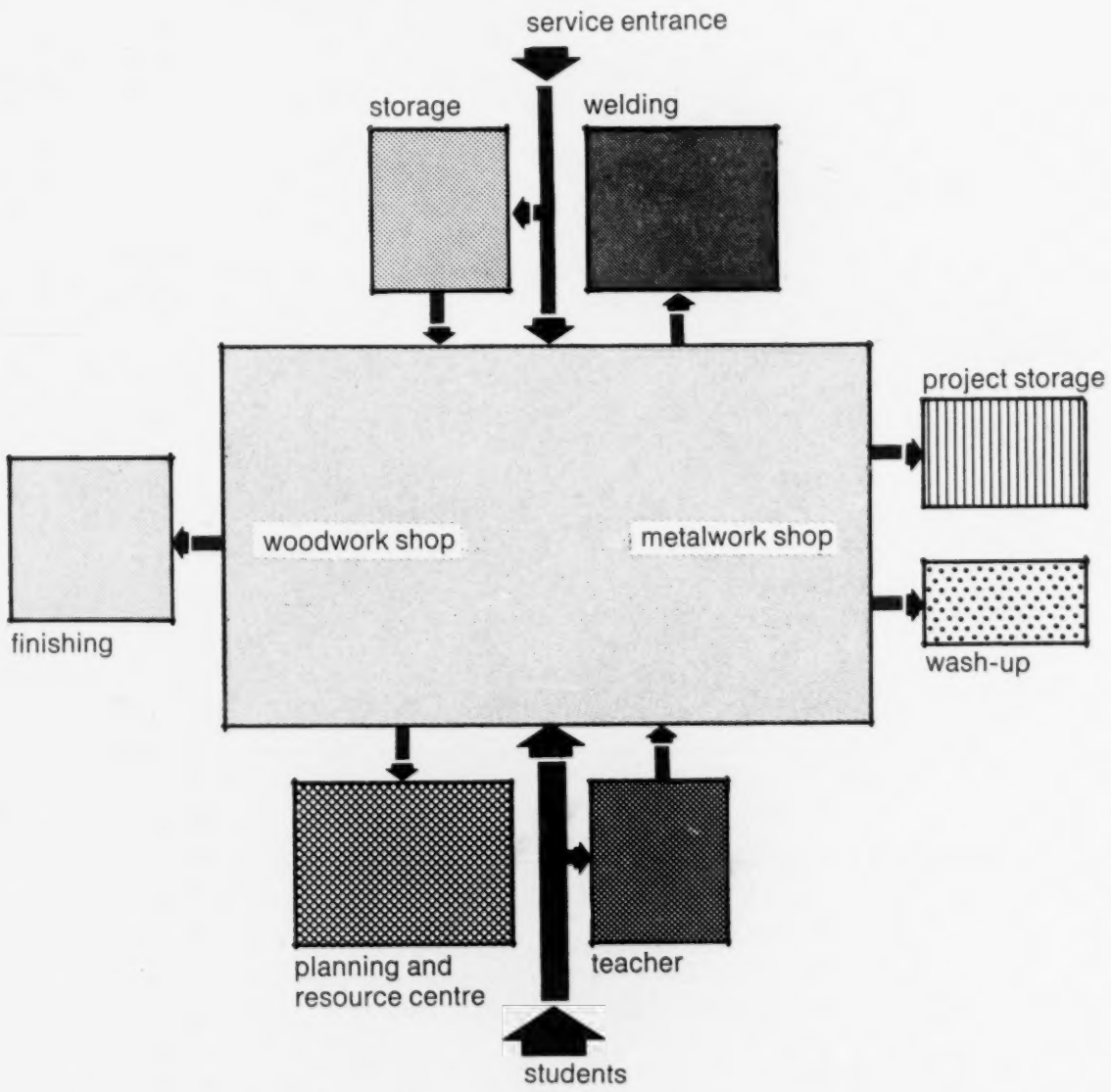
Space Relationship



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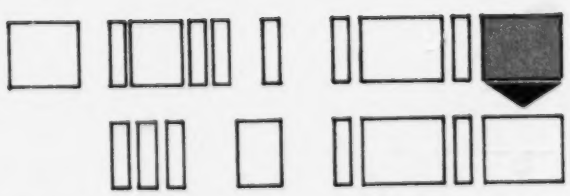


Safety and health
Adequate, and separate, exhaust systems for:

- general area
- finishing area

Overhead exhaust collection is needed for locations involving volatile and toxic fumes from:

- reinforced plastics
- welding and soldering
- chemical mixing areas for plastic

A dust collection system is recommended for areas containing dust-producing machines such as saws and planers. Portable dust collectors may be considered as an alternative to the complete duct system.

Finishes
Acoustical material on the ceiling will reduce the noise level in the room. Wood, pressed wood tile, or resilient tile on concrete floors is advisable. Special areas such as welding will require some type of hardened surface. Conventional wall materials are suitable if they are finished with a durable, easy-to-maintain coating.

Services

Electrical

A distribution panel 200-amp, three-phase, 120/208v, four-wire system, located in the room should contain a keyed, on/off control indicator light and an emergency stop button. Several emergency buttons should be spaced throughout the room as well as circuit breakers for each machine. Electrical outlets of 120v are required close to work areas for portable power tools; switch controlled from the power panel. Machines should be equipped with magnetic switches and be panel controlled. Lighting must provide adequate illumination as recommended by the Canadian National Building Code.

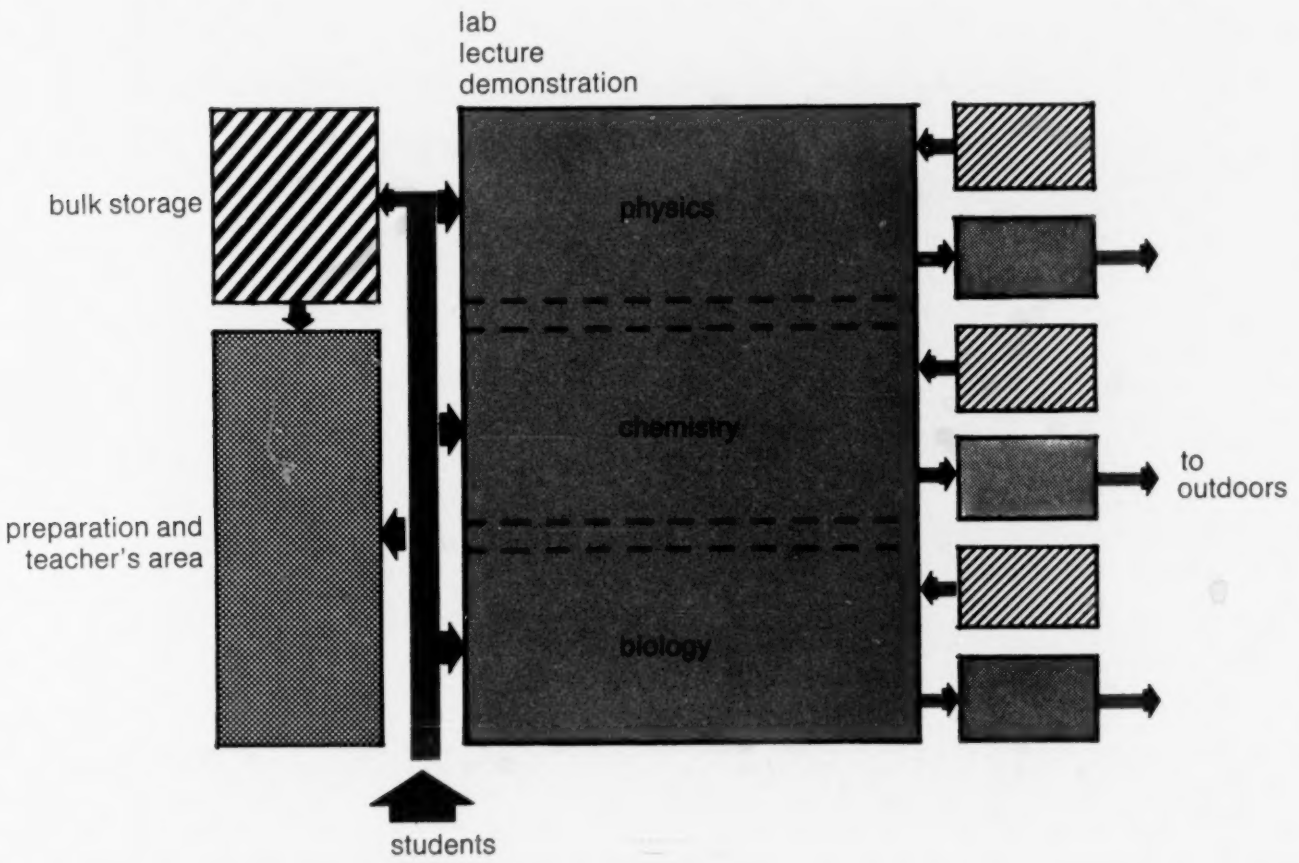
Natural gas

If available, natural gas should be installed for use with the forge.

Water

Both hot and cold water connections are necessary for washing facilities.

Space Relationship



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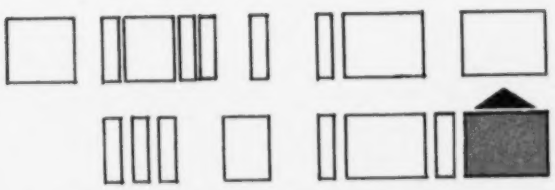

Science (biology, chemistry, physics)

Function
The function of the science course is to enable the student to understand the nature of science and to enjoy the challenge of the problems encountered in the laboratory, to comprehend the procedures and techniques of the scientist, to explore and satisfy his curiosity and to understand the inter-relationship between man and his environment.

Space should be provided for preparation, demonstration, individual and group research, maintenance and construction of simple types of apparatus. Some or most of the work can be done in the industrial or visual arts area.

Location
This area should be close to industrial arts, visual arts and home economics areas. Access to the outdoor area is essential for observation of plants and animals and for the study of astronomy. A ground floor location is recommended to facilitate delivery of equipment, chemicals and specimens.

Area
The number of laboratories depends on the school enrolment and the science program.

If separate laboratories are used for chemistry, biology and physics, an area of 1,250 sq. ft. is recommended for each lab which includes 150 sq. ft. of storage space. If the labs are combined for an enrolment of up to 700, an area of 2,400 sq. ft. is recommended. This includes 200 sq. ft. storage allowance. For an enrolment of up to 1,100, an area of 3,500 sq. ft. is suggested including 500 sq. ft. storage space.

Components

Reading reference area
An area of 80 sq. ft is suggested, equipped with a study table, a few chairs and book and magazine rack.

Long-range investigation
Adequate work surface on counters or tabletops and a few storage units should be provided where equipment and apparatus may remain assembled for several days.

General working area
This is an area where students may record and organize observations, study demonstrations and participate in discussion.

Work area equipped with services
Science programs call for the use of water, electricity and gas. To maintain maximum flexibility of space and mobility of the equipment, services should be located only on the perimeter thereby leaving a suitable location for demonstrations and lectures within the main area.

The facilities should be designed to provide:

- maximum flexibility to permit various methods of operation which may be adjusted to meet the needs of changes in organization, curricula and methods
- arrangement of furniture allowing easy movement of students and teachers
- accommodation for effective instruction of different science courses, eg., biology and general science
- storage facilities which may be organized by the teacher so that the time and effort required to prepare for student experimentation are reduced to a minimum
- facilities for storage and use of visual aids including films, film strips and the following types of projectors: overhead, opaque, micro, slide, single concept and loop
- black-out facilities which are essential for the use of visual aids
- a display cupboard
- adequate ventilation
- two doors from laboratory to corridor
- safety features—fire extinguishers, first aid kits
- cleaning facilities including soap dispensers and towel racks
- conduits for TV cable

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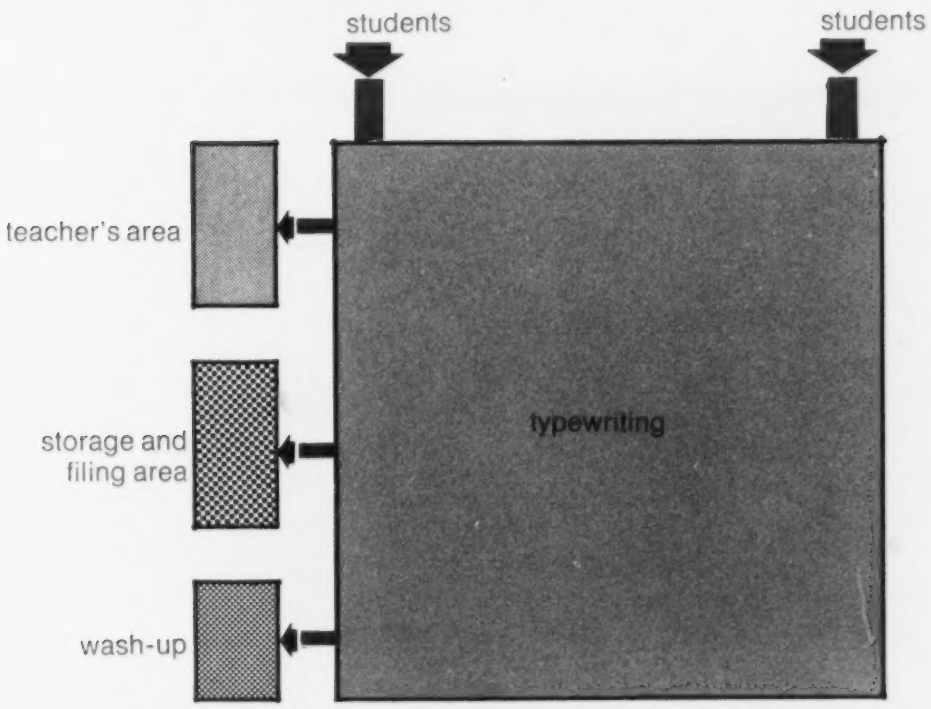
Space Relationship



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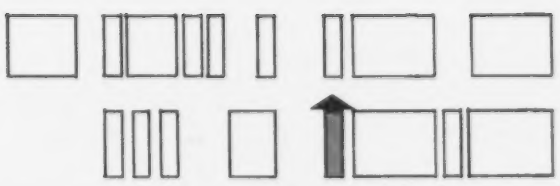

Typewriting

(Only in a school serving pupils beyond grade 8)

Function
A typewriting room should have facilities to offer the students a course in the basic techniques of typewriting and the application of the typewriter as a useful instrument for personal and educational purposes, also to lay the foundation for further development of basic typing skills and their application for vocational use.

Location
The noise factor should be considered in locating the facility. A closed area is recommended, near to the library resource centre and academic areas. Acoustical treatment is necessary.

Facilities

Area
A room size of 1,200 sq. ft. will provide space for a maximum of 35 students. Sufficient aisle space is required to permit the instructor to observe students effectively. Adequate storage space for supplies and materials should also be furnished.

Typewriters
For beginning classes it is advisable to equip the room with one carefully selected make of typewriter. Any plan to renovate or add new rooms should include wiring for the possible eventual installation of electric typewriters. Schools which accommodate more than one typewriting room might equip one with electric typewriters and one with manuals. Before buying or leasing typewriters a thorough investigation of service facilities should be made.

Desks and chairs
Typewriter desks should be adjustable and vibration free. A desk top of 20 in. x 42 in., adjustable to at least three heights—26 in., 28 in. and 30 in.—is recommended. Space is required in the desks for typewriting texts and for books and personal belongings.

A posture chair that provides support for the back and forces the student to lean toward the typewriter is desirable.

Light
Lighting is extremely important because of the detailed nature of the work. In order to take advantage of any natural light in the room, it is recommended that desks be arranged so that the natural light comes from the student's right and the typing text will not be in the shadow of the typewriter.

Miscellaneous equipment
Additional equipment for a typewriting room includes the following: worktables, storage and filing cabinets, bookshelves, audio-visual aids, copyholders, stapler, interval timer, paper cutter, stop watch, keyboard and posture charts, hand bell and cleaning facilities. Sufficient electrical outlets need to be provided for typewriters and audio-visual devices.

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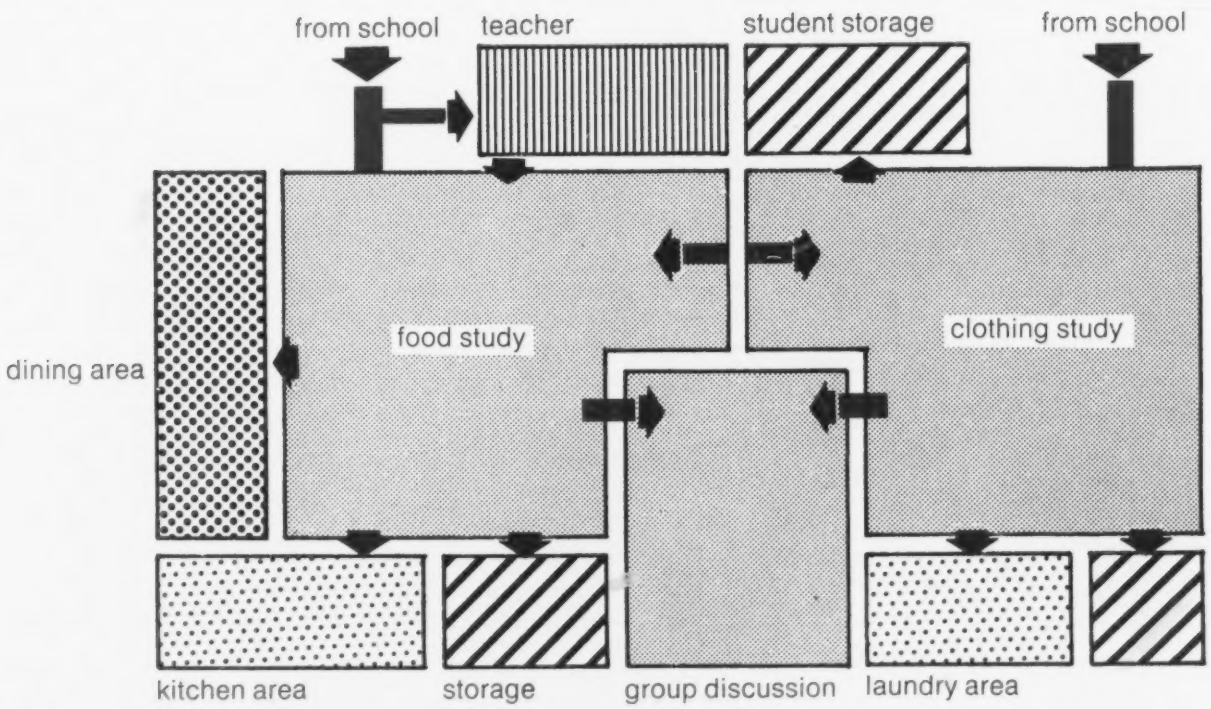
Space Relationship



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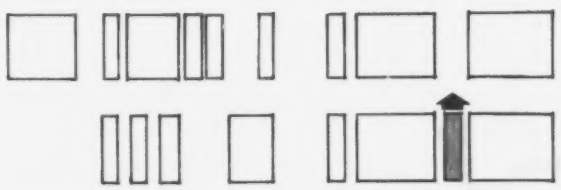

Family Studies (Home Economics)

Function
Family studies, briefly defined as education for family living, encompass family development, consumer education, housing, food and nutrition, and clothing. In the successful implementation of this broad program in family studies, the provision of appropriate facilities is an important factor.

Location
For ease in the installation of equipment and the delivery of supplies, a ground floor location is desirable. For reasons of economy in the expansion of facilities and their functional use, a location adjacent to the general learning area of the school is recommended.

Area
Varying with enrolment, a school will require single, double or triple facilities for family studies. For a school enrolment of 600 or less, a single facility with an area of 1,300 sq. ft. is suggested. For a school enrolment between 600 and 1,200 pupils, a double facility is suggested with an area of 2,600 sq. ft. When the school enrolment exceeds 1,200 pupils, in addition to a double facility, it is suggested that one unit of the adjacent general learning area be used for family studies. A movable wall between the double facility and the general learning area is recommended.

Components
Three main components constitute: a food study section, a group discussion section, and a clothing study section.

In a triple facility, a unit of the general learning area of the school is added to the two units of the double facility.

Equipment

Food and nutrition
Four to six range units are required to serve 20 pupils, suitably arranged for ease of maintenance. Each kitchen should be equipped with a double stainless steel sink and a gas or electric range. The following can also be included:

- portable or built-in dishwasher
- a wall clock
- work counter with cupboards and drawers

Textiles
- ten sewing machines
- work tables
- sturdy ironing boards near the sewing area

Laundry
- automatic washer and dryer (the dryer must be vented)
- storage cupboard for supplies
- work counter with a double stainless sink

Fitting room
A separate fitting room is not necessary. A curtained cubicle is sufficient with an area of 6 sq. ft. with three positioned mirrors for viewing and suitable lighting.

Services
Suitable services for such equipment as stoves, refrigerator, washer and dryer are required, as well as an adequate number of electrical outlets in appropriate locations. Exhaust ducts above stoves should be considered. A sufficient continuous supply of both hot and cold water, and a satisfactory drainage system are needed. Safety features to reduce fire hazards are of basic importance.

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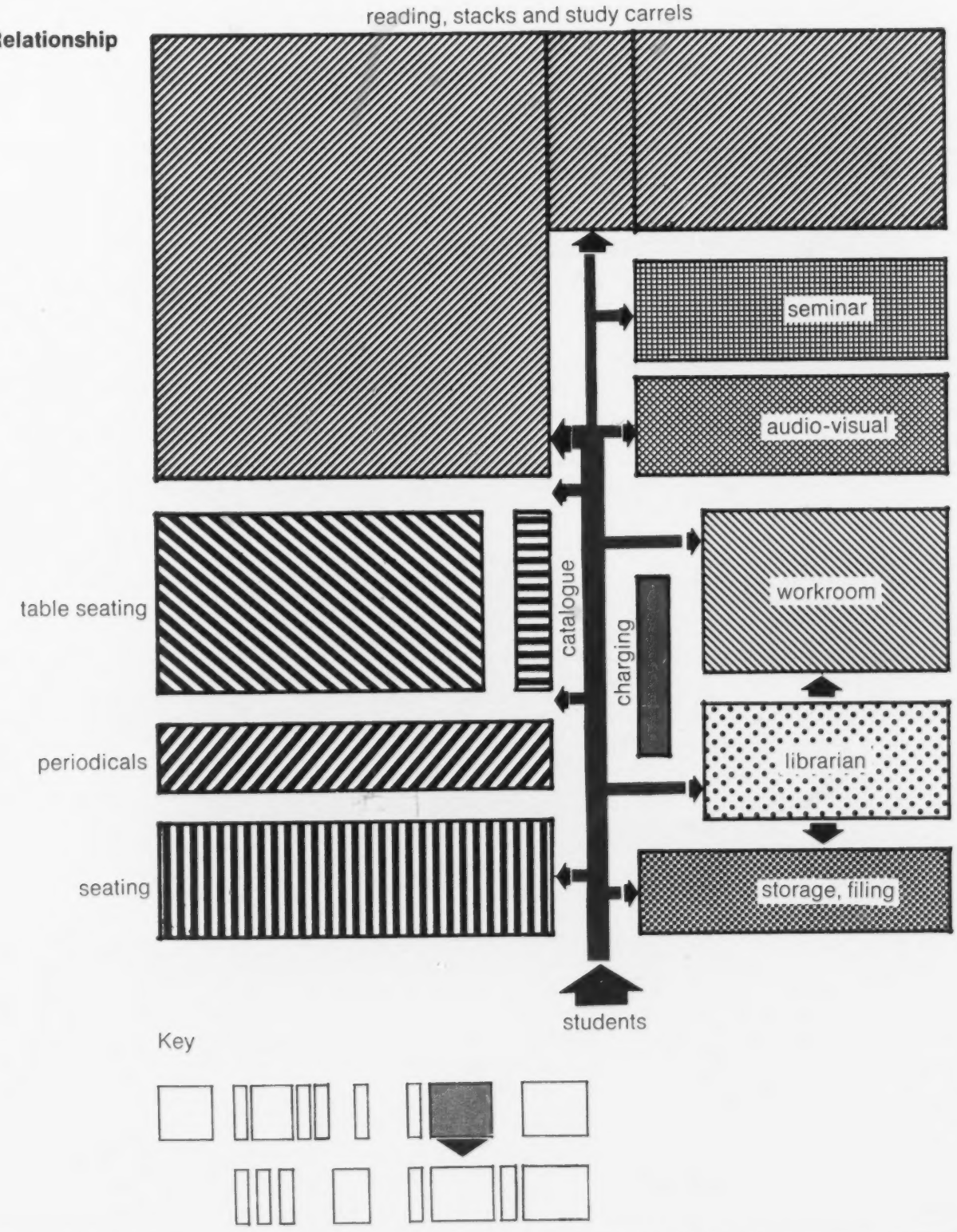
Space Relationship



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Media Centre

Function
The media centre (or the library resource centre) is a multi-media complex which provides for:

- the selection, acquisition and production of a wide range of learning materials to support, enrich and implement the educational programs of the school
- the organization of these materials so that they are instantly accessible to students and teachers
- the most convenient utilization of these materials by large or small groups of students as well as by individuals

Location
It must be so located that it can fulfill its function effectively by being accessible to the school community at all times.

Provision should be made for future expansion of the centre into adjoining spaces should this be required by an increase in student enrolment or by changes in the educational program of the school.

Facilities
The areas suggested are characteristic of a senior public school with an enrolment of 900 students.

The use of demountable walls is recommended wherever this is practicable for such areas as seminar rooms, offices and work rooms to facilitate future internal rearrangements of the centre layout.

Space should be provided for the following activities:

Selection, acquisition and production of materials:

- audio-visual production area—300 sq. ft.
- dark room—100 sq. ft.
- librarian's office—150 sq. ft.
- workroom—250 sq. ft.

Organization, storage and circulation of materials:

- stacks for print and non-print materials (20,000 items)—1,000 sq. ft.
- periodicals shelving—100 sq. ft.
- vertical file housing—100 sq. ft.
- card catalogue—100 sq. ft.
- charging desk—150 sq. ft.

Utilization of materials:

- independent study carrels—40 persons 25 sq. ft. per person—1,000 sq. ft.
- table seating—30 persons, 15 sq. ft. per person—450 sq. ft.
- seminar rooms—40 persons, 15 sq. ft. per person—600 sq. ft.
- comfortable chairs (browsing)—200 sq. ft.

Special consideration should be given to:

- climate control
- acoustical treatment of floors and ceilings
- providing ample electrical capacity for the use of audio-visual equipment
- ventilation requirements of the audio-visual production area
- making the library accessible to the students beyond normal school hours by the arrangement of entrances and the location of washrooms

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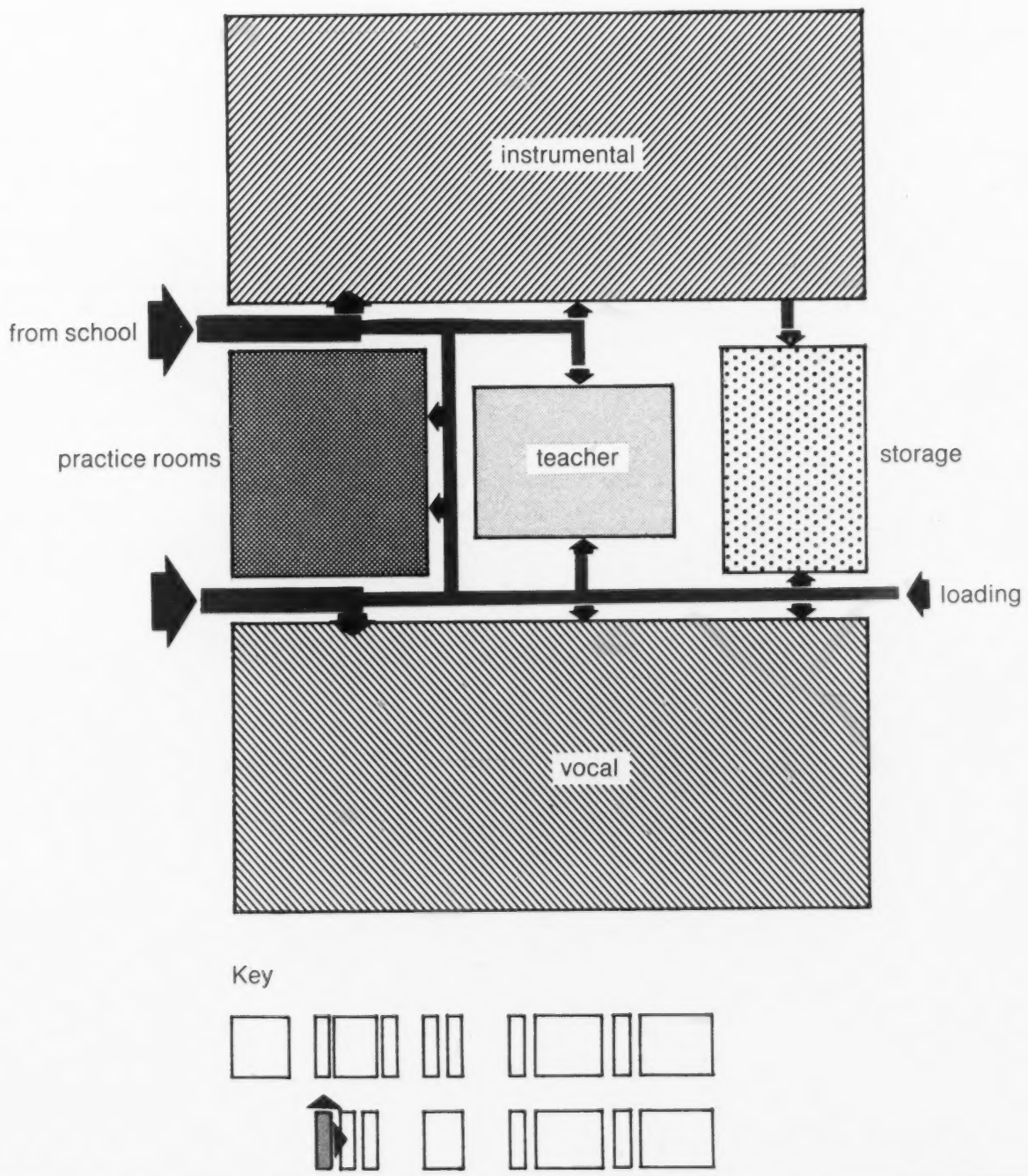
Space Relationship



Music Facilities

Function
To provide opportunities for personal growth through music in three ways—performing, listening and creating. This is considerably enhanced by a suitable setting and a well planned area that can be used by both students and, at times, by the community.

Location
The following should be considered in locating the facilities:

- relationship to areas such as visual arts, drama and assembly room.
- noise transmission to and from the facility.

Facilities

Instrumental or vocal room
A rectangular room provides better visual and audio communication than a square room. The side walls should be slightly sloped in the horizontal plane for acoustical reasons.

For instrumental, approximately 20 sq. ft. of floor space is required for each student and the storage of his equipment. Minimum requirement for a room to accommodate 65 students is 1,300 sq. ft. and an average height, approximately 14 ft. is recommended. For vocal, 1,000 sq. ft. is recommended, and an average ceiling height of not less than 14 ft.

Combined instrumental and vocal room
For acoustical reasons, it is difficult to combine these facilities with optimum results. Where one room only is justified, it is recommended that the room be designed to instrumental room specifications.

Practice rooms
The practice rooms are to be used for individual and small group instruction.

The practice room should be near the instructional area and the teacher's room, taking into consideration isolation between the two spaces to prevent sound transmission.

For a school enrolment of 900 students, 200 sq. ft. is recommended. This area can be divided in several ways in accordance with the music program. The minimum area for a practice room is 50 sq. ft. which is suitable to accommodate up to three students.

Auxiliary areas
Additional space such as storage, music library, teacher's workroom, listening space may be included according to the needs of the program.

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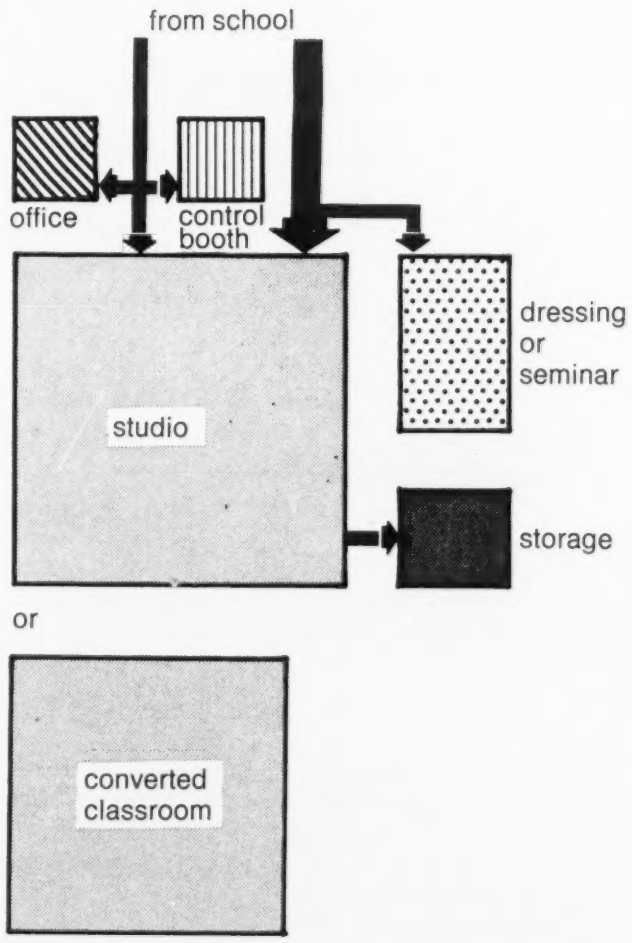
Space Relationship



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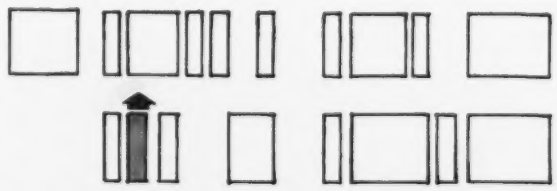

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Dramatic Arts

Function
Dramatic arts in today's schools helps the student develop as a person and discover more about himself and the world around him. It also instills a love of the theatre and literature, and builds self-confidence and the ability to communicate in the student.

There is a distinction between drama and theatre. Drama is for everyone; it requires no "natural talent".

Theatre is more specialized, it is specifically organized and rehearsed and is intended to be shared with an audience.

For this reason, it is essential that space for dramatic arts be as flexible as possible, so that if students are ready and able to explore a more challenging and sophisticated activity, their creative planning will not be crippled by the inadequacy of poorly planned facilities.

Location
Dramatic arts is a group activity which results in varying degrees of noise and movement. It should be located in an area separated from quiet learning areas. For this reason, the location is recommended on the ground floor level or in the basement, if possible, and in close proximity to the auditorium, but away from heavily travelled corridors with lockers, or a busy public area.

Area
Any of the following layouts for the teaching of dramatic arts can be used:

- a converted single classroom
- a converted double classroom
- a specifically designed studio
- a specifically designed studio complex

In a converted single classroom or a specifically designed studio, the recommended area is 800-1,000 sq. ft.

Converted single classroom
The following is a suggested list of equipment to be included in a converted single classroom area:

- Floor to ceiling black-out draw curtains should be installed along three walls. These curtains should be a dark neutral shade, ideally, similar to the colour of the floor carpeting
- Built-in shelving for books, recordings, tapes, etc., and pigeon-hole cubicles for storing student project materials
- Some modest additional stage lighting is required. Brackets could be attached to the walls, close to the ceiling in each corner of the room and two spotlights clamped to each bracket. A rheostat should be installed by the door to control the lighting
- If seating is required, it can be provided by folding or stacking chairs that can be stored in one corner of the room
- As part of its permanent equipment, the studio should have a record player, a tape recorder and a slide projector
- Double electrical power outlets should be placed at baseboard level on three walls, the projection wall left free
- The acoustic tile ceiling should be painted a dark neutral colour to avoid the problem of light reflection
- Movable carpeted platforms (rostra) of varying shapes and sizes to provide different levels and flexible staging arrangements

A specially planned studio can offer more usable space and a ceiling of the right height for installation of a lighting grid. The lighting system should be controlled by a portable dimmer panel in the control booth. An office and dressing rooms are desirable for a planned studio and can also serve as project workshop, seminar spaces, film editing room, etc.

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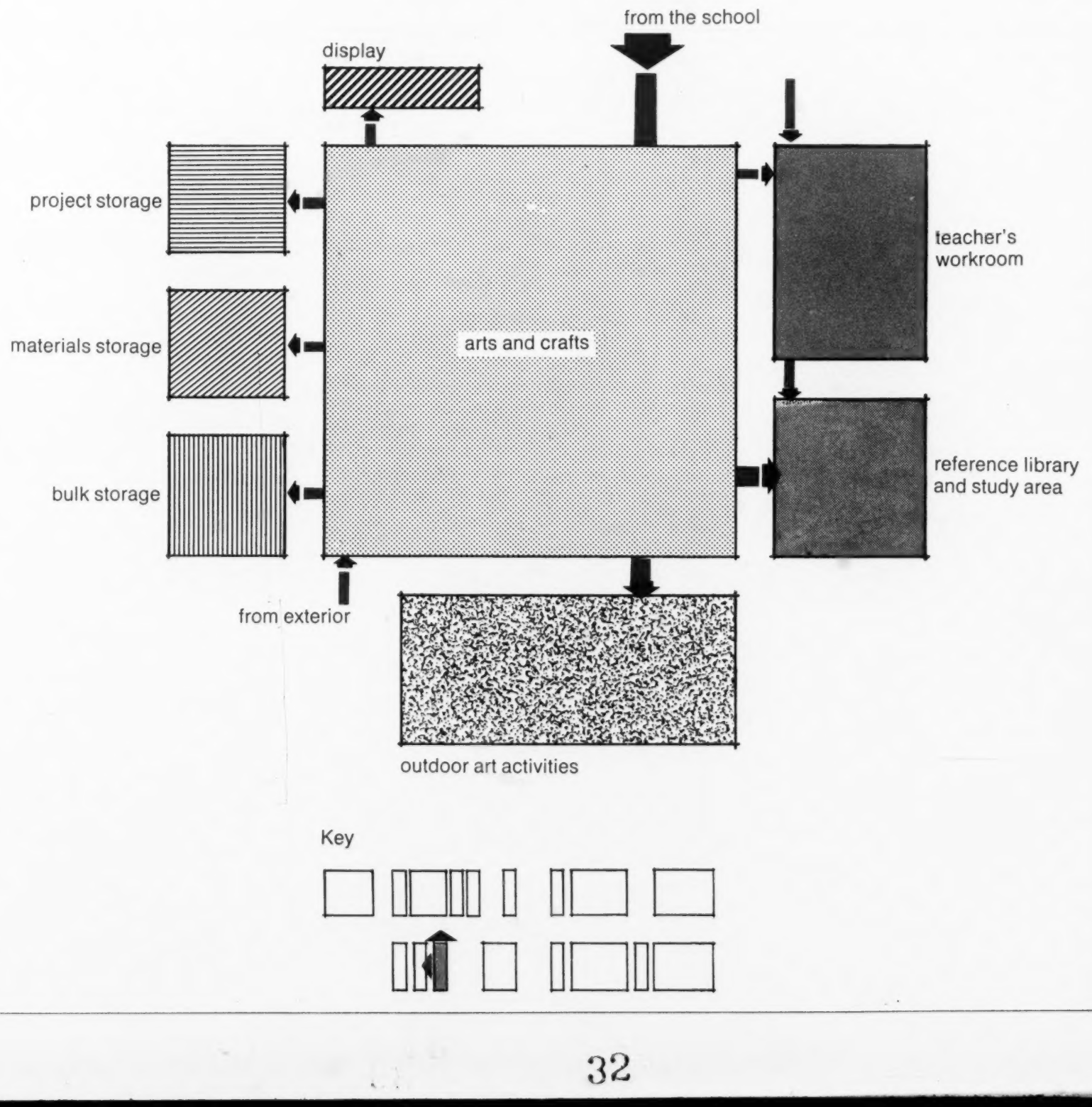
Space Relationship



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Arts and Crafts

Function
Art is offered so that the student may learn to present his personal reactions to his own experiences in life. In doing so, he becomes acquainted with the media of art, learns to handle them with a degree of skill, and develops his perceptive abilities in relation to his environment.

Location
A main floor location should be chosen, if possible, to facilitate delivery and handling of bulk material and make provision for outdoor work. A close spatial relationship between drama and music facilities is desirable to create an art centre in the school.

Area
For the intermediate level, in a school of 900-student enrolment, double facilities may be needed, which would require a total area of 2,200 sq. ft. including approximately 250 sq. ft. storage space. Suggested work area for each teacher is 50 sq. ft.

Aspects of planning
In planning the art room, special provisions should be made for:

- mobility and flexibility of equipment and materials in and out of the room
- reference and study: a small area in which to take a book or magazine. The area should have a bookshelf, table and chairs and have a direct approach from the art room
- storage: three main store areas for bulk supplies of materials and equipment, work in progress and completed work
- display: a) wall surface to be covered with sheet cork
  b) upper display boards to be covered with sheet cork, framed and hung on pulleys
  c) shelving of varying widths, adjustable: horizontal and sloping
  d) mobile units for drying and displaying clay modelling and pottery
  e) display case with glass shelves, peg-board at back and concealed lighting
- adequate electrical outlets for equipment. For fire safety, all electrical units should display a conspicuous pilot light when in use
- water: sinks with hot and cold water supply for various activities such as: modelling, pottery, plaster work, painting, dyeing, and general clean-up
- outdoor work: when the art room is located on the first floor, there may be provided an outdoor working area connected with the art room

Requirements for painting and drawing
- space for free arrangement of furniture and equipment (variety of working surfaces, all tough, durable and easy to clean)
- facilities for storing materials, equipment and work
- facilities for display of work and reference material
- controlled natural and adjustable artificial lighting
- services:
  a) two sinks with hot and cold water or a long sink with several taps
  b) electric outlets are needed for local lighting and visual aid equipment

Requirements for fabric printing
- tables and stools
- cupboards and drawers
- large sink with drain board
- large table for printing fabric
- a bench with a laminated plastic top
- drying racks
- storage
- display

Requirements for clay modelling and pottery
- storage for bulk materials: bins or movable containers
- preparation of the clay: a pug-mill, a wedging bench, a sink, plaster bats, miscellaneous items
- modelling: heavy tables or benches, wheels, molds, plaster, tools, dump cupboard and miscellaneous items
- decorating: benches, shelves, sink, gas or electric outlets, cupboards
- firing: kiln (electric), shelving

Requirements for block printing
- a firm working surface
- good lighting
- adequate space
- sink
- facilities for drying prints
- some cupboard or drawer space

Requirements for bookcraft
- general preparation
- facilities for pressing the sections, marking and sewing, trimming, glueing, covering, finishing and storing

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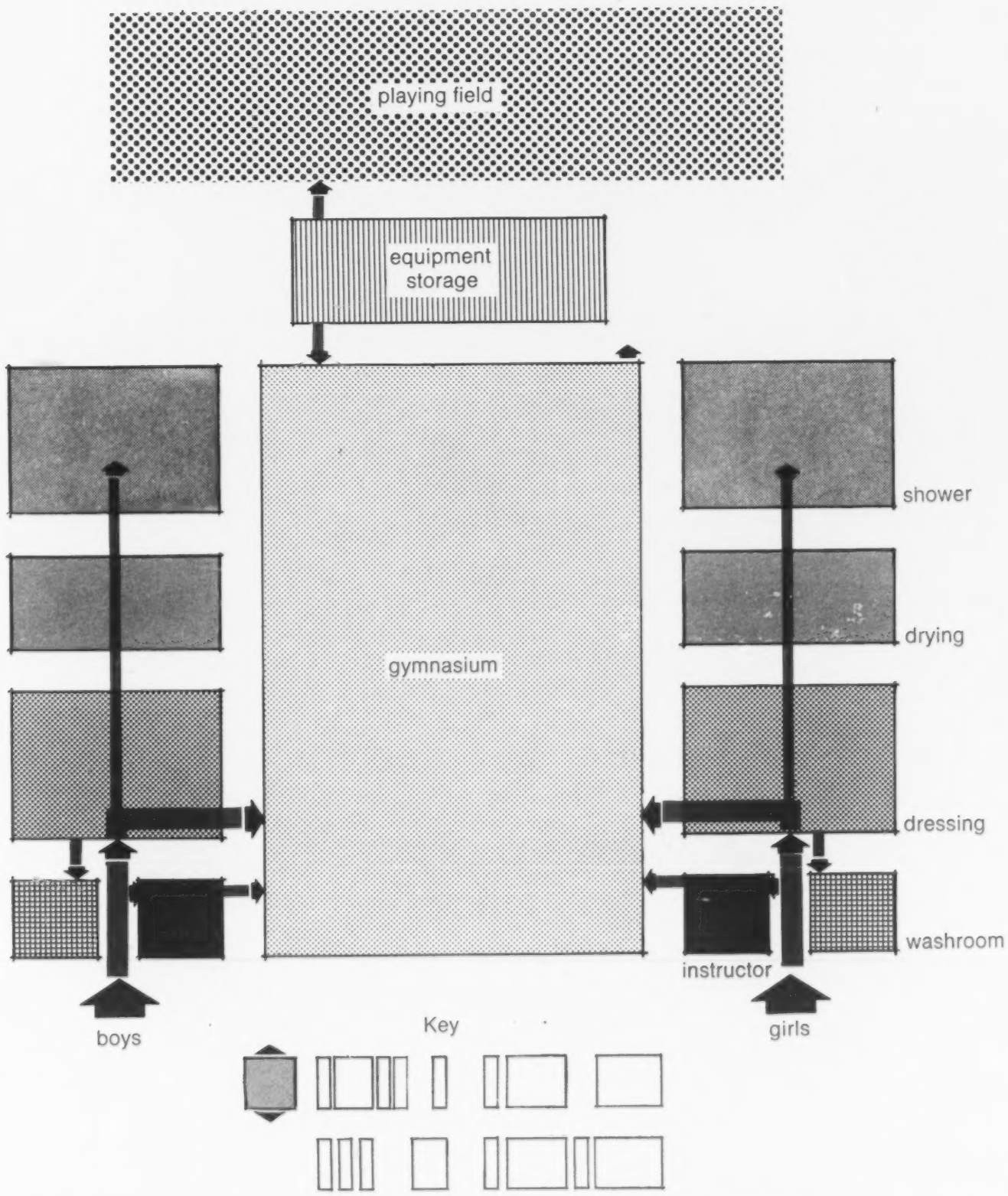
Space Relationship



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Physical Education

Function
The major aim of physical education is to meet the needs of the student in four ways: emotional, intellectual, physical and social.

Location
The gymnasium should be located and planned so that noise will not interfere with other learning areas and therefore it can be used after school hours independent of, and closed off from the rest of the school building. It should be convenient to the outdoor activity area.

Areas

Gymnasium
The dimensions of both the single and double gymnasium are determined on the basis of the various activities that are part of the program, and the number of students who will be making use of them at any given time.

There is a trend toward the increased use of these facilities by adult organizations and other recreational groups. Therefore, consideration should be given to discussion of cost-sharing arrangements where facilities are to be expanded for community use.
Single gymnasium: 70′ x 40′
Double gymnasium: 90′ x 70′

Dressing rooms
Separate rooms for girls and boys should be provided as square as possible, with an area approximately 400 sq. ft. each for average use per school day of 240 students.

Drying rooms
As square as possible, minimum size 140 - 150 sq. ft.

Shower rooms
Separate showers for boys and girls should be provided.

Boys: A minimum of ten and a maximum of twelve shower heads is recommended. The area required depends on the arrangement. If it is one wall, double wall or three wall arrangement, the area per shower head is about 18 sq. ft. Shower heads for boys should be placed six feet above the floor.

Girls: Individual shower cubicles with attached change areas are recommended. A minimum of six cubicles is required. If an open shower room is used, two closed cubicles with attached change areas should also be provided. The area of the girls' shower room depends on the shower arrangement. (Open shower + 2 cubicles require about 200 sq. ft.) Shower heads for the girls should be placed 5 ft. above the floor.

Washrooms
These rooms should not serve as general school washrooms. There should be a minimum of two water closets, two urinals, two wash basins for boys — four water closets, and two wash basins for girls.

Instructors' offices
There should be separate offices for male and female. Each room should have an area of 125 sq. ft. A wash basin, mirror, medicine cabinet, water closet, shower and locker should be provided.

Storage
An equipment room with a minimum of 225 sq. ft. is recommended. One wall should be at least 20 ft. long. This room should be directly accessible to the gymnasium with an exit to the playground if possible.

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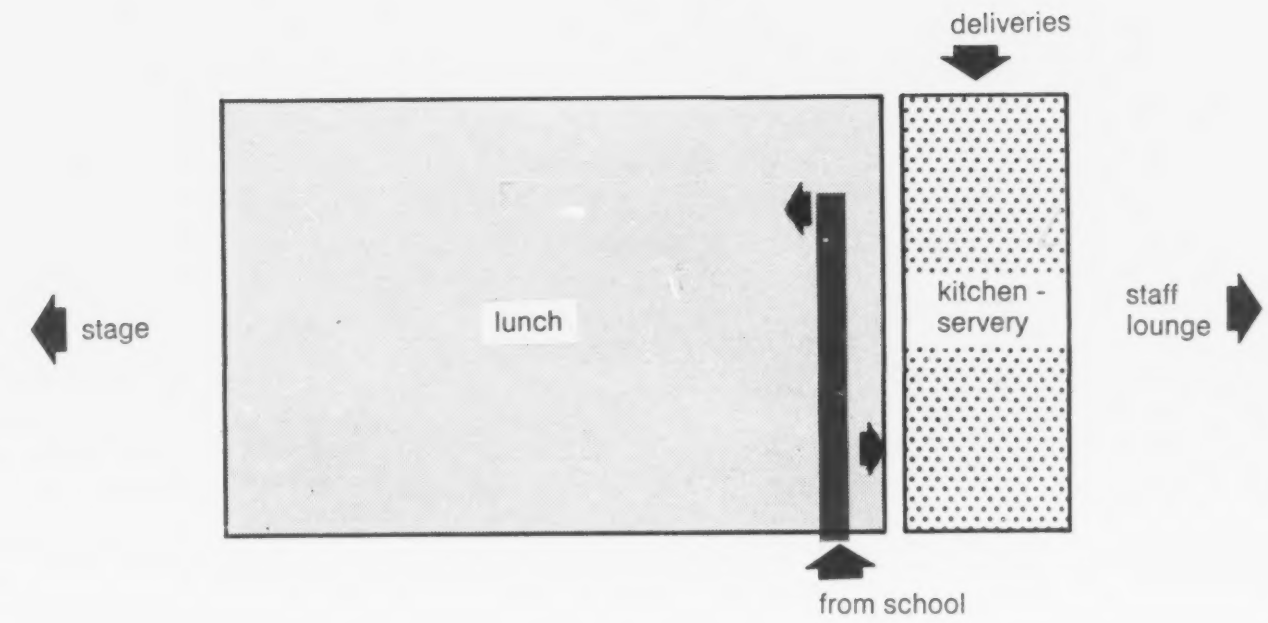
Space Relationship



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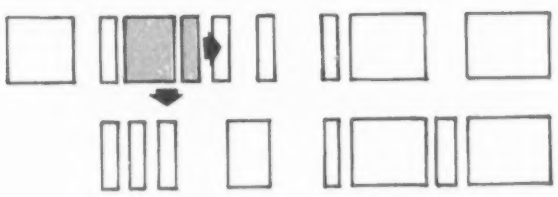

Lunch Room

Function
Wherever possible students should go home for lunch, however in most schools a proportion of the students will remain on the premises. It is necessary therefore to provide a suitable place for these students to eat their lunch.

From an educational point of view, the objectives of school lunch services are:

- to provide appetizing nutritious food in hygienic surroundings, thus helping to promote the students' optimum health
- to provide students with a desirable social experience and to foster good food habits

Location
Providing school lunch facilities depends upon local needs and circumstances and may be classified as:

- without kitchen facilities but with seating arrangements for students bringing their own lunch
- with facilities provided for the serving of soups and beverages to supplement the students own lunches

The lunch room should be used as a general purpose facility, in which other activities can be undertaken, and should be easily accessible to the student body. Where kitchen servery facilities are included a separate entrance will be required for the delivery of supplies.

Area
The total area required can be calculated in the following manner:

- assume that ⅔ of the students will use the facility, accommodated in two separate sittings
- allow 10 sq. ft. for every person to be seated at one time

For a school enrolment of 900 students the area required would therefore be:

900 x ⅔ x ½ x 10 sq. ft. = 3,000 sq. ft.
The area of the facility equals ⅓ of school enrolment multiplied by 10 sq. ft.

Kitchen
If hot meals are to be served, the school kitchen could be used as a receiving kitchen. The food is brought in, either from a central kitchen or by a catering service. The advantages of this are:

- economy through quantity purchasing
- lower preparation costs
- efficient use of labour
- uniform food quality and better hygienic control
- economy in space as well as building and equipment

When considering adoption of this system, the time factor regarding food distribution, and transportation cost should be borne in mind.

The area recommended for the school kitchen is approximately 300 sq. ft.

School Planning and Building Research Brochures

	Year	No. of Pages
An Experimental Student Housing Study	1969	88
Business and Commerce Facilities for Secondary Schools	1966	20
Colleges of Applied Arts and Technology — Guidelines for Planning	1968	44
Colleges of Applied Arts and Technology — Master Planning	1969	36
Colleges of Applied Arts and Technology — Movement and Growth Patterns	1969	28
Dorm 8 — An Experimental Social Study	1969	30
Guidance Centres for Secondary Schools	1965	14
Home Economics	1968	16
Industrial Arts for Elementary and Secondary Schools	1969	16
Library Materials Centres for Secondary Schools	1966	20
Music Facilities	1969	23
Physical Education Facilities for Elementary Schools	1969	26
Principles of Site Development, Elementary Schools K-6	1967	38
Rehabilitation of Schools	1966	10
Relocatable Learning Facilities	1970	32
Report on Various Construction Contracts	1968	7
School Design Forum	1967	18
Schools and Playgrounds for Trainable Mentally Handicapped Children	1969	24
Science Laboratories for Secondary Schools	1968	47
Special Environments for a Regional Centre for the Hearing Handicapped	1970	30
Special Education Facilities for Emotionally Disturbed Children	1968	33
Technical and Occupational Shops — Vol. I	1968	36
Technical and Occupational Shops — Vol. II	1969	50